

**BEFORE  
THE PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA**

**DOCKET No. 2001-65-C**

IN THE MATTER OF: )  
 )  
Generic Proceeding to Establish Prices )  
For BellSouth's Interconnection Services, )  
Unbundled Network Elements and Other )  
Related Elements and Services )  
\_\_\_\_\_ )

**DIRECT TESTIMONY OF**

**JERRY WILLIS**

**ON BEHALF OF**

**NuVox Communications**

**\*Public Version\***

**JUNE 4, 2001**

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I. INTRODUCTION

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.**

A. My name is Jerry Willis. My business address is NuVox Communications, Inc., 301 North Main Street, Greenville, South Carolina 29601.

**Q. WHAT IS NUVOX COMMUNICATIONS?**

A. NuVox Communications, Inc. ("NuVox") is a facilities-based integrated communications and applications services provider focusing on small and medium-sized businesses. The company is the result of the November 1, 2000 merger of Gabriel Communications, Inc. ("Gabriel"), a Competitive Local Exchange Carrier ("CLEC") headquartered in St. Louis, Missouri and Trivergent Communications, Inc. ("TriVergent"), headquartered in Greenville, South Carolina.

TriVergent was founded in November of 1997 and began offering local and long distance telecommunications services via resale to residential and small business customers in South Carolina in May of 1998. In May of 1999, we began the process of deploying our own switching facilities for the migration of our customer base onto these facilities.

Following the completion of the merger between Gabriel and Trivergent, the combined company chose NuVox Communications as its new operating name. The Southeastern headquarters for the company are located in Greenville, South Carolina. NuVox currently employs approximately 1100 employees.

NuVox currently provides local and long distance voice services, dedicated high speed Internet access, digital subscriber line access, and web hosting services to

1 business and residential customers in 30 markets in 13 states across the Southeast  
2 and Midwest.

3 **Q. ON WHOSE BEHALF ARE YOU FILING THIS TESTIMONY?**

4 A. In addition to NuVox Communications, I am filing this testimony on behalf of  
5 New South Communications, Broadslate Networks, ITC^Deltacom  
6 Communications, and KMC Telecom.

7 **Q. PLEASE STATE YOUR OCCUPATION, BACKGROUND AND WORK**  
8 **EXPERIENCE.**

9 A. I have over thirty-five (35) years of experience in the telecommunications  
10 business and have worked with Competitive Local Exchange Carriers (CLECs),  
11 Incumbent Local Exchange Carriers (ILECs), Interexchange Carriers (IXCs )and  
12 consulting firms. I currently serve as the Senior Director Network Development  
13 for NuVox. My responsibilities include implementation of switches, collocations,  
14 engineering, power and other elements needed to build the company's  
15 telecommunications network. In this capacity I have directed company and  
16 vendor employees in equipment installation and testing of sixty-one collocations,  
17 completing all sites in three months for an average of one site completion per day.  
18 I have been employed by NuVox since May of last year.

19  
20 Prior to joining NuVox, in 1998 I co-founded and served as President of  
21 Telecomm Services Group, a consulting company providing professional and  
22 technical services to telecommunications service providers including process

1 development and project management services for implementation of OSS  
2 systems.

3  
4 From January of 1997 to November of 1998 I was Director, Network Services for  
5 IXC Communications, an interexchange carrier located in Austin, Texas. In that  
6 capacity I was responsible for circuit design, provisioning and OSS selection and  
7 implementation.

8  
9 From March of 1996 to January of 1997 I was the Director of Provisioning for  
10 McLeod USA, a Competitive Local Exchange Carrier ("CLEC") headquartered in  
11 Cedar Rapids, Iowa. As Director of Provisioning I was charged with designing  
12 and implementing new customer services for an eight state area.

13  
14 Prior to McLeod USA, I served as Director of International Business  
15 Development with Corporate Telemanagement Group, Inc. ("CTG") and was  
16 responsible for identifying and developing new business opportunities as well as  
17 recruiting and managing in-country agents.

18  
19 Prior to working with CTG, from October of 1986 until January of 1991, I was  
20 employed with Telecom USA as Network Director. During this time I managed  
21 groups responsible for network assignment, utilization and configuration  
22 including facility and circuit engineering, provisioning and implementation of

customer ordered services. I also planned and developed network facility administration, provisioning, and circuit design groups.

From 1970 until 1986 I was employed by Contel, and ILEC headquartered in St. Louis, MO. While with Contel I served in various capacities, including stints as Special Services Technician, Division Transmission Engineer, District Superintendent, Division Planning Engineer and Manager, Proposal and Contract Development. Prior to joining Contel, I served from 1965 until 1970 as a technician with the Bell System.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. The purpose of my testimony is to demonstrate that many of the nonrecurring charges proposed by BellSouth for collocation are inflated. I have reviewed the cost studies filed by BellSouth in this case, and my testimony is based on my 35 years of industry experience. BellSouth proposes collocation charges that in some instances are many times greater than a reasonable estimate of cost.

**Q. HAVE YOU ANALYZED EVERY COLLOCATION RATE ELEMENT AND THE PROPOSED RATES FOR THOSE ELEMENTS?**

A. No. I have focused on a handful of nonrecurring charges proposed by BellSouth. I specifically address rates for the following collocation elements:

- Application Cost – Initial (H.1.1);
- Application Cost – Subsequent (H.1.46);
- Space Preparation – Firm Order Processing (H.1.45)
- Security Access – Initial Key (H.1.54)
- Security Access – Replacement Key (H.1.56)

1 **Q. WHAT CONCLUSIONS HAVE YOU DRAWN FROM YOUR REVIEW?**

2 A. BellSouth's nonrecurring collocation charges are inflated by the use of overstated  
3 work times in the cost studies. While I do not understand all of the details of the  
4 BellSouth model, I know that the work times for specific provisioning functions  
5 are major drivers in generating cost outputs produced by the model. The high  
6 nonrecurring rates proposed by BellSouth are the result of the overstated work  
7 times used in the cost model. Adjustments to those work times will generate  
8 lower costs figures. I recommend that the Commission order BellSouth to rerun  
9 its cost model using the more reasonable work times I have recommended. I have  
10 only reviewed the cost studies for a few of the proposed rates. However, based on  
11 the few studies I reviewed, I believe other nonrecurring rates are also likely  
12 inflated.

13 **Q. DO BELL SOUTH'S COST STUDIES EXPLAIN THE ACTIVITIES AND**  
14 **WORK TIMES INCLUDED?**

15 A. No. There is no explanation for the functions BellSouth includes as necessary for  
16 specific nonrecurring rates. The studies typically just list the name of an internal  
17 BellSouth work group and list a work time for the group. There is no explanation  
18 at all of what the group does. The Commission should require BellSouth to  
19 provide additional documentation and explanation of these cost studies. For rates  
20 as high as those discussed here, the Commission should expect much more  
21 supporting information.

1   **Q.    IS OBTAINING COLLOCATION SPACE IN ILEC CENTRAL OFFICES**  
2       **IMPORTANT TO CLECS OFFERING TELECOMMUNICATIONS**  
3       **SERVICE IN SOUTH CAROLINA?**

4    A.    Yes. The ability to collocate equipment in an ILEC central office is of the utmost  
5           importance to NuVox and other competitive providers. We use unbundled  
6           network elements (“UNEs”) in combination with our own switch to serve our  
7           customers and to interconnect with other carriers. We access BellSouth’s  
8           unbundled local loops through our collocation space in BellSouth’s central  
9           offices.

10   **Q.    HOW ARE A COMPANY’S COLLOCATION EFFORTS AFFECTED BY**  
11       **NON-RECURRING CHARGES?**

12   A.    If nonrecurring charges for collocation services are inflated, collocation, becomes  
13           prohibitively expensive in all but a handful of central offices. Without  
14           widespread access to unbundled local loops through collocation, NuVox cannot  
15           offer consumers a competitive choice for telecommunications services.  
16           BellSouth’s recurring rates are also important. Don Wood will testify about these  
17           rates.

18   **Q.    HAVE YOU EVER ENGINEERED COLLOCATION SPACES FOR**  
19       **BELLSOUTH?**

20   A.    No, I have not. However, throughout my career in telecommunications I have  
21           worked in an around central offices. I have visited hundreds of central offices  
22           across the country including those of BellSouth, AT&T and US WEST. While



1 with NuVox, I have managed 172 collocation installations in BellSouth central  
2 offices.

3 **Q. BRIEFLY DESCRIBE THE COLLOCATION PROCESS FROM THE**  
4 **INITIAL APPLICATION STAGE TO THE SPACE ACCEPTANCE**  
5 **STAGE.**

6  
7 A. The process is as follows;

- 8
- 9 i. CLEC submits Initial Application BellSouth
  - 10 ii. BellSouth provides to CLEC a Customer Inquiry Response
  - 11 iii. CLEC submits a Firm Order to BellSouth
  - 12 iv. BellSouth performs construction to ready the space for collocation
  - 13 v. BellSouth sends Notification of Space Ready to CLEC
  - 14 vi. CLEC completes construction of collocation space and installs equipment
  - 15 vii. CLEC and BellSouth sign off on space completion
- 16

**II. Physical Collocation – Initial Application Fee (Rate Element H.1.1)**

**Q. DESCRIBE WHAT IS INVOLVED IN COMPLETING THE INITIAL APPLICATION.**

**A. The Initial Application requires the CLEC to identify the following:**

- CLEC name, address and contact information
- Common Language Location Identifier (CLLI) Codes, street address for a Central Office where collocation space is requested
- Space requirements (cage or cageless and the amount of square feet required for cage space
- Cageless space reserved for future use
- Equipment to be installed or removed
  - By rack, by equipment model
  - Equipment manufacturer
  - Model Number
  - Description
  - Quantity
  - Heat dissipation
  - -48 volt power requirements (nominal and worse case)
- -48 volt power and grounding
  - Isolated ground plane / integrated building ground plane
  - Quantity of -48 volt breakers requested (all are 225 amps)
  - Collocator or BellSouth provided BDFB

- 1     •     Indicate whether a direct connection to a non-contiguous collocation arrangement
- 2             is requested or not
- 3     ○             Provide Collocator A and B name and ACNA
- 4     ○             Type of service (DS0, DS1, DS3, fiber)
- 5     ○             Indicate type of cable, outside diameter, number of cables and weight
- 6     •     Cable facilities (entrance facilities)
- 7     ○             Indicate Type of cable (fiber entrance, fiber riser, microwave radio coax,
- 8             microwave radio waveguide
- 9     •     Cable information
- 10    ○            Cable description, outside diameter, weight, sheath type
- 11    •     Share space
- 12    ○            Guest company names, ACNA
- 13    •     Equipment Wiring requirements
- 14    ○            Termination Type
- 15    ○            Quantity of DS0, DS1, DS3, fiber pairs to be installed
- 16    •     Contact information for
- 17    ○            Equipment wiring
- 18    ○            Technical questions
- 19    ○            Local coordinator
- 20    ○            Building access
- 21    •     Billing information
- 22    ○            Address
- 23    ○            Contact person BAN

1     ○             Check number and amount

2     •             Certification of technical compliance with specific industry standards

3

4             An example of a completed Initial Application is attached as **Exhibit JW-1**. The  
5     Initial Application serves as the CLEC's inquiry regarding the availability of  
6     collocation space within a specific end office. It takes me approximately 30  
7     minutes to complete this form.

8     **Q.     HOW AND TO WHOM ARE INITIAL APPLICATION FORMS**  
9     **SUBMITTED?**

10    A.     We originally submitted the Initial Application forms by paper via facsimile.  
11         However, since April of this year we have submitted these forms to BellSouth  
12         online via electronic format. With the new online electronic format, we log on  
13         and access the Initial Application via the internet. We then fill in all information  
14         online. Once the application is completed, we submit the application  
15         electronically, like sending an e-mail. NuVox's Initial Applications are submitted  
16         to BellSouth Collocation Management, Clarence E. Trant, Account  
17         Representative.

18    **Q.     WHAT TYPE OF RESPONSE DO YOU RECEIVE FROM BELL SOUTH?**

19    A.     I have attached as **Exhibit JW-2** an example of a response from BellSouth to an  
20         Initial Application. The response includes information regarding the availability  
21         of space in the central office identified in the Initial Application. If space is  
22         available then BellSouth returns a Customer Inquiry Response ("CIR") indicating  
23         that fact. If space is not available, we receive notification from our collocation

1 account manager, Clarence E. Trant. If space is available, we also receive from  
2 our collocation account manager an estimate regarding the cost and time interval  
3 estimate with a preliminary floor plan for the collocation build out. However, a  
4 separate space preparation fee that is exclusive of the cost of the Initial  
5 Application covers this estimate.

6 **Q. WHAT IS REQUIRED OF BELL SOUTH TO PREPARE A RESPONSE TO**  
7 **THE INITIAL APPLICATION?**

8 A. Once BellSouth receives the Initial Application, a BellSouth representative refers  
9 to the drawings of the floor plan for the particular central office for which the  
10 CLEC has requested collocation space. The drawing should provide enough  
11 information for an accurate response. Even if the BellSouth representative is  
12 unsure about the accuracy of the Central Office drawings, he or she may contact  
13 the manager of the Central Office and request that the Central Office manager and  
14 have the Central Office manager measure the space. The BellSouth representative  
15 could also be required to verify that no other pending applications are in process  
16 for that particular central office.

17 **Q. HOW MUCH WORK TIME DOES BELL SOUTH INCLUDE FOR THE**  
18 **COMPLETION OF ITS RESPONSE TO AN INITIAL APPLICATION ?**

19 A. The work times BellSouth has used to develop the nonrecurring rate for the Initial  
20 Application are included on page 1 of the "Inputs\_Nonrecurring" worksheet  
21 included in the cost study. Column B of the worksheet contains the name of the  
22 various work groups in BellSouth involved in the process. The estimated work  
23 times for each of those groups is listed in Column F of the worksheet. A copy of

1 the relevant pages of this worksheet are attached as Exhibit JW-3. The total  
2 work time BellSouth claims is necessary to review and respond to the Initial  
3 Application exceeds 51 hours – the sum of the work times in column F “Install”  
4 on page 2 of the exhibit. There is no explanation of what these work groups in  
5 Column B do in connection with the application.

6 **Q. WHAT IS THE PRACTICAL EFFECT OF THIS 51 HOUR WORK**  
7 **TIME?**

8 A. First, it means that if we send an Initial Application to BellSouth on Monday  
9 morning, BellSouth claims that it will take one person nearly six (6) eight (8) hour  
10 work days to provide us with a simple yes or no response regarding the  
11 availability of collocation space. Second, this overstated worktime leads to  
12 BellSouth’s \$3,767.34 proposed nonrecurring charge for the review of and  
13 response to an Initial Application (H.1.1). The 51 hour work time is much more  
14 than what should reasonably be required to complete this work.

15 **Q. WHAT DO YOU CONSIDER AS A REASONABLE AMOUNT OF TIME**  
16 **TO REVIEW AND RESPOND TO AN INITIAL APPLICATION?**

17 A. Actual on-line application (“eApp”) experience indicates that an application is  
18 usually reviewed by BellSouth the same day NuVox submits the application. The  
19 eApp on-line software automatically rejects applications with missing  
20 information. Therefore, I assume no manual editing of the application is required.  
21 It is difficult to understand why 11 hours is required for the Account Team  
22 Collocation Coordinatory (“ATCC’s”) action on the application (Row 12/Column  
23 F on the exhibit). There are other time allotments on the same worksheet that do

1 not appear to be logical. As an example, the Interexchange Network Access  
2 Coordination ("INAC") requires 20 hours for review of the Initial Application  
3 (Row15/Column F), yet Power Capacity Management ("PCM") requires only 1  
4 hour (Row16/Column F). Power is typically the most expensive nonrecurring and  
5 recurring cost for a caged collocation.

6 **Q. WHAT DOES YOUR EXPERIENCE WITH THE INITIAL**  
7 **APPLICATION PROCESS INDICATE ABOUT THE WORK TIMES IN**  
8 **BELLSOUTH'S COST STUDY?**

9 A. Our experience does not indicate that the process takes as much effort as the cost  
10 study suggests. BellSouth has assigned Clarence E. Trant as our contact for  
11 completing the Initial Application Process. Between March 14, 2001 May 23,  
12 2001 we have submitted 172 applications. All of these applications have been  
13 processed and passed on to either the firm order or space ready stage. If each  
14 application required approximately 51 hours to complete, the applications should  
15 have taken over 8,772 man hours or 4.2 man years to complete.

16 **Q. CAN YOU RECOMMEND ADJUSTMENTS TO THE BELLSOUTH**  
17 **WORK TIMES?**

18 A. Yes. I have adjusted the work time estimates to remove overstated time. For  
19 example, I remove 10 hours per application for the ATCC's activity and 12 hours  
20 for the INAC coordination. The alternative time allotment amounts to 29.25  
21 hours. Accordingly, the nonrecurring charge for the Initial Application Process  
22 should be recalculated based on the hourly rates. A table showing my adjusted  
23 work times compared to BellSouth's proposals is included below.


1  
2  
3  
4  
5  
6

I cannot rerun BellSouth's cost model using these adjusted work times to generate a new nonrecurring rate. However, I am confident that the result would be a much lower rate. I recommend the Commission order BellSouth to rerun its model with these revised inputs.



1       **III.    Physical Collocation - Subsequent Application Fee (Rate Element H.1.46)**

2       **Q.    DESCRIBE THE SUBSEQUENT APPLICATION PROCESS.**

3       A.    Once the CLEC has worked with BellSouth to complete the collocation build out  
4           for space in a particular central office, we often have to come back later and add  
5           equipment or cabling to that space. When this is necessary, NuVox presents  
6           BellSouth with a Subsequent Application outlining the proposed modification to  
7           the collocation space. The same information that is required on an Initial  
8           Application is required on a Subsequent Application for the equipment or cabling  
9           being added. I have attached as Exhibit JW-4 a completed Subsequent  
10          Application.

11       **Q.    HOW LONG DOES IT TAKE NUVOX TO PREPARE AND SUBMIT A**  
12       **SUBSEQUENT APPLICATION?**

13       A.    It takes us approximately 30 minutes to pull together the information and populate  
14           the electronic application. Like the Initial Application, the Subsequent  
15           Application is submitted to our BellSouth Account Team Collocation Coordinator  
16           ('ATCC') online in electronic format.

17       **Q.    WHAT IS INFORMATION IS REQUIRED BY THE BELL SOUTH IN**  
18       **THE SUBSEQUENT APPLICATION?**

19       A.    The same information required by the Initial Application.

20       **Q.    WHAT IS REQUIRED OF BELL SOUTH TO REVIEW AND PREPARE A**  
21       **RESPONSE TO THE SUBSEQUENT APPLICATION?**

22       A.    This process is largely the same as for the Initial Application.

1 **Q. HOW MUCH TIME DOES BELL SOUTH INCLUDE IN THE COST**  
2 **STUDY FOR THE COMPLETION OF ITS RESPONSE?**

3 A. The work time BellSouth claims is necessary is shown on Exhibit JW-3 in the  
4 middle of the page under rate element H.1.46. The BellSouth work groups are  
5 listed in column D, and the proposed work times are included in column F  
6 (“Initial”). The total for the times in this column (from rows 24-33) exceeds 39  
7 hours.

8 **Q. WHAT IS THE PRACTICAL EFFECT OF THIS ESTIMATE?**

9 A. Using these numbers, if we send a Subsequent Application to BellSouth on  
10 Monday morning BellSouth claims that it will take one person nearly one full  
11 work week (five (5) days of eight (8) hours work per day) to provide us with a  
12 simple yes or no response regarding the possibility of altering our current  
13 collocation space. Bear in mind that BellSouth has already reviewed the  
14 application previously. BellSouth’s proposed nonrecurring charge for the review  
15 of and response to a Subsequent Application is \$3,140.19 (H.1.46).

16 **Q. WHAT IS A REASONABLE AMOUNT OF TIME FOR THE REVIEW**  
17 **AND RESPONSE TO A SUBSEQUENT APPLICATION?**

18 A. In the table below I have adjusted the time estimates to remove overstated time.  
19 For example, I remove 10 hours per application for the ATCC’s activity and 12  
20 hours for the INAC coordination. The alternative time allotment amounts to 17  
21 hours. The nonrecurring charge for the Subsequent Application Process should  
22 be recalculated based these adjusted work times. I recommend the Commission  
23 require BellSouth to rerun its cost model with these adjusted inputs.


1

2 **Q. DOES YOUR EXPERIENCE WITH THE SUBSEQUENT APPLICATION**  
3 **PROCESS SUPPORT THESE ALTERNATIVE TIME ALLOTMENTS?**

4 A. Yes. In submitting Subsequent Applications, CLECs are asking for approval to  
5 augment the space. BellSouth has already completed the study regarding initial  
6 construction for which BellSouth charges an Initial Application Fee and a separate  
7 Space Preparation Fee.

8

1 **IV. Space Preparation – Firm Order Processing Fee (Rate Element H.1.45)**

2 **Q. DESCRIBE SPACE PREPARATION – FIRM ORDER PROCESSING.**

3 A. Following the submission of an Initial Application or Subsequent Application  
4 from a CLEC, BellSouth responds by way of a Customer Inquiry Response  
5 (“CIR”). I have attached as Exhibit JW-5 a CIR. The CIR outlines estimated  
6 costs and time intervals for the construction of the collocation space.

7 **Q. DOES NUVOX PROVIDE ANY ADDITIONAL FORM,**  
8 **DOCUMENTATION, OR INFORMATION TO BELL SOUTH FOR THE**  
9 **COMPLETION OF THE CIR OTHER THAN THE INFORMATION**  
10 **PROVIDED VIA THE APPLICATION PROCESS?**

11 A. Yes. A Firm Order Confirmation is sent after receipt of the CIR. This on-line  
12 form is notification that the CLEC intends to proceed with the requested  
13 collocation. Most fields on the document are prepopulated with the exception of  
14 contact information for the CLEC’s BellSouth Certified Vendor(s).

15 **Q. WHAT IS REQUIRED OF BELL SOUTH IN SPACE PREPARATION –**  
16 **FIRM ORDER PROCESSING?**

17 A. BellSouth prepares a written response by e-mail to the CLEC stating that the  
18 proposed work can begin soon as a Method of Procedure is provided to the  
19 manager of the BellSouth central office affected. I have attached an example of  
20 such a written response as Exhibit JW-6.

21 **Q. HOW MUCH TIME DOES BELL SOUTH INCLUDE FOR THIS STEP?**

22 A. BellSouth claims that time necessary to process a Firm Order is 22.5 hours. The  
23 work times are shown on page 4 of Exhibit JW-3 under the rate element H.1.45 in

rows 155-157 of the worksheet. However, as previously stated, there is no additional information for BellSouth to review in processing the Firm Order than that information BellSouth reviewed for 51 or 39 hours in preparing a response to the Initial or Subsequent Application, respectively. BellSouth's proposed nonrecurring charge for the review of and response to a Space Preparation – Firm Order Processing is \$1,204. It is important to recognize that this on-line form is notification to BellSouth that the CLEC, based on the preliminary interval and costs estimates, intends to proceed with the requested collocation. Most fields on the document are prepopulated with the exception of contact information for the CLEC's BellSouth Certified Vendor(s). This proposed \$1204 fee is in addition to the Application Fee.

Consider that if you look at the Initial Application Process and Space Preparation – Firm Order Confirmation together, BellSouth contends that it takes 51 + 22.5 hours of work – nearly two full work weeks and \$3767 + \$1204 to provide the “customer” with a response regarding the availability of space and an estimate of the cost and time interval for completing the space.

**Q. ARE BELSOUTH'S WORK TIMES AND FEE FOR THIS STEP APPROPRIATE?**

A. No. The time allotment of over 22.5 hours is not justified in this case and is greatly exaggerated. In turn, this results in a proposed nonrecurring charge that exceeds BellSouth's costs.

**Q. WHAT IS THE BASIS OF YOUR OPINION?**

1 A. I base my opinion on three factors.

- 2 • First, there is no additional information for BellSouth to review in preparing  
3 the Firm Order than that information BellSouth reviewed for 51 or 39 hours in  
4 preparing a response to the Initial or Subsequent Application, respectively.  
5 Actually there is much less information on the Firm Order (3 pages) than is on  
6 the Application (12 pages).
- 7 • Second, the Firm Order does not include any information additional to the  
8 Application and is submitted online via electronic format directly to the INAC  
9 and central office manager.
- 10 • Third, the cost estimates and time estimates are rarely accurate. Following  
11 construction, BellSouth provides an invoice for charges often many times  
12 higher than the original space preparation estimate. Moreover, the preparation  
13 intervals are also rarely accomplished in a timely manner.

14 **Q. WHAT DO YOU CONSIDER AS A REASONABLE AMOUNT OF TIME**  
15 **TO ALLOT FOR THE PREPARATION OF THE FIRM ORDER?**

16 A. There appear to be no manual entries required of BellSouth in the Firm Order.  
17 Once the CIR is sent (as an attachment to an e-mail) the Firm Order form is  
18 available on the on-line eApp system. The CLEC simply adds any vendor contact  
19 information that is available and submits the Firm Order electronically. This  
20 requires less than 5 minutes. The Firm Order is forwarded to the INAC and the  
21 CLEC receives an e-mail that the vendor can contact the appropriate BellSouth  
22 Central Office Manager to present the installation Method of Procedure ("MOP")  
23 for approval and discuss the work.

1     **Q.     WHAT IS YOUR RECOMMENDATION?**

2     A.     I recommend the Commission require BellSouth to rerun its cost model using the  
3           1 hour work time to generate this nonrecurring charge.

4

1                   **V.     Security Access – Initial and Replacement Keys.**

2     **Q.     HAVE YOU REVIEWED OTHER PROPOSED NONRECURRING**  
 3     **CHARGES THAT APPEAR TO BE UNREASONABLE?**

4     A.     Yes. I have reviewed the BellSouth proposed rates for Security Access – Initial  
 5     Key (H.1.54) and (4) Security Access – Replacement Key (H.1.56).

6     **Q.     ARE THESE RATES APPROPRIATE?**

7     A.     No. BellSouth is proposing nonrecurring charges of \$26.25 Initial Key and  
 8     Replacement Key orders. Although this is a decrease from the current \$55.70, I  
 9     find nothing in the base cost to support this charge. BellSouth orders these keys  
 10    from Best Access Services. Best Access Services sends the keys directly to  
 11    NuVox. The cost of each individual key is \$1.98. Attached as Exhibit JW-7 is  
 12    an invoice from Best which reflects the \$1.98 cost. I know the underlying cost of  
 13    the keys because NuVox orders keys from Best Access Services. There is no  
 14    justification for BellSouth to pass on a mark-up of this magnitude to the price of  
 15    the key. Moreover, BellSouth does not offer any refund when the CLEC returns  
 16    the key to BellSouth.

17  
 18                   **CONCLUSION**

19    **Q.     WHAT CONCLUSION HAVE YOU DRAWN ABOUT THE RATES**  
 20    **PROPOSED BY BELL SOUTH?**

21    A.     They are extremely high. Indeed, in many cases these rates are many multiples of  
 22    actual costs. The rates are high because the work times on which the rates are  
 23    based are overstated. As I understand it, the Commission is charged with setting



1 rates based on costs. The corrections that I have made to the BellSouth work times  
2 reflect realistic processing times. I recommend the Commission require  
3 BellSouth to rerun its cost model to generate new rates based on these more  
4 realistic work times. This process will yield truly cost-based rates.

5 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

6 **A.** Yes, it does.

Certificate of Service

The undersigned certifies that on June 4, 2001, she caused to be served the foregoing DIRECT TESTIMONY OF JERRY WILLIS on all known parties of record by placing a copy in the United States Mail, first class postage prepaid, addressed as follows:

F. David Butler, Esquire  
General Counsel  
SC Public Service Commission  
P.O. Box 11649  
Columbia, SC 29211

Marsha A. Ward, Esquire  
Kennard B. Woods, Esquire  
MCI Worldcom, Inc.  
Law and Public Policy  
6 Concourse Parkway, Suite 3200  
Atlanta, GA 30328  
(MCI)

Caroline Watson, Esquire  
General Counsel-South Carolina  
BellSouth Telecommunications, Inc.  
1600 Williams Street, Suite 5200  
Columbia, SC 29201  
(BellSouth)

Darra W. Cothran, Esquire  
Woodward Cothran & Herndon  
00 Main Street, 6<sup>th</sup> Floor  
P.O. Box 12399  
Columbia, SC 29211  
(MCI)

R. Douglas Lackey, Esquire  
T. Michael Twomey, Esquire  
General Attornes  
BellSouth Telecommunications, Inc.  
Suite 4300, BellSouth Center  
675 West Peachtree Street, N.E.  
Atlanta, GA 30375  
(BellSouth)

Russell B. Shetterly, Esquire  
Haynsworth Marion McKay & Guerard  
P.O. Drawer 7157  
Columbia, SC 29202  
(American Communications Services, Inc.)

William F. Austin, Esquire  
Austin Lewis & Rogers  
P.O. Box 11716  
Columbia, SC 29211  
(BellSouth)

Marty Bocock, Esquire  
1122 Lady St., Ste. 1050  
Columbia, SC 29201  
(Sprint-United Telephone Company)

Elliot F. Elam, Jr., Esquire  
SC Department of Consumer Affairs  
3600 Forest Drive, 3<sup>rd</sup> Floor  
P.O. Box 5757  
Columbia, SC 29250-5757  
(SC Dept. of Consumer Affairs)  
Frank R. Ellerbe, III, Esquire  
Robinson, McFadden & Moore, P.C.  
P.O. Box 944  
Columbia, SC 29202  
(SC Cable Television Association)

John F. Beach, Esquire  
Austin, Lewis & Rogers  
P.O. Box 11716  
Columbia, SC 29211  
(SCPCA)

John J. Pringle, Esquire  
Beach Law Firm  
P.O. Box 11547  
Columbia, SC 29211  
(Access Integrated Networks, Inc.  
and Trivergent)

Francis P. Mood, Esquire  
Haynsworth Sinkler Boyd, P.A.  
P.O. Box 11889  
Columbia, SC 29211-1889  
(AT&T)

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Faye A. Flowers, Esquire

# EXHIBIT 1

For BellSouth Use Only:  
 BellSouth Reference Number: BRHMALCP-SAU-01  
 Inquiry Receipt Date: \_\_\_\_\_ Issue: \_\_\_\_\_  
 Firm Order Confirmation Date: 10/22/99



EXPANDED INTERCONNECTION APPLICATION  
 AND FIRM ORDER DOCUMENT

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1. CUSTOMER INFORMATION

Company Name TirVergent Communications, Inc. ACNA SAU \_\_\_\_\_  
 Company Address 200 N Main St., Suite 303 City/State/Zip Greenville, SC 29601  
 Jurisdictions: IntraLata X Intrastate X Interstate X  
 Signature date of local interconnection agreement with BellSouth: 4/27/99  
 Signature date of physical collocation agreement with BellSouth: 4/27/99

COLLOCATION PROJECT COORDINATOR

Name Frank Hoffmann E-mail/Internet Address fhoffmann@trivergent.com  
 Mailing Address 200 N. Main St., Suite 303 City/State/Zip Greenville, SC 29601  
 Telephone # 864.678.7756 Pager # \_\_\_\_\_ Facsimile # 864.271.7810

2. REQUESTED EIS LOCATION

Wire Center Name \_\_\_\_\_ CLLI Code BRHMALCP  
 Street Address 41 20<sup>th</sup> Ave. NE City/State/Zip Birmingham, AL 35215

3. TYPE OF INTERCONNECTION ACTIVITY

- X Initial arrangement installation
- \_\_\_\_\_ Augmentation to an existing arrangement
- \_\_\_\_\_ Existing arrangement, equipment change and/or wiring changes
- \_\_\_\_\_ Existing arrangement, partial equipment disconnect and removal
- \_\_\_\_\_ Existing arrangement, complete equipment disconnect and removal
- \_\_\_\_\_ Conversion of existing virtual arrangement to a physical arrangement
- \_\_\_\_\_ Interconnection of collocation arrangements within this location

4. FLOOR SPACE REQUIREMENTS

A. Equipment enclosure X Yes \_\_\_\_\_ No  
 B. Equipment enclosure to be constructed by BellSouth \_\_\_\_\_ Yes X No  
 If yes to A or B, enclosure floor space requirements \_\_\_\_\_ 150 \_\_\_\_\_ square feet  
 If no to A or B, non-enclosed floor space requirements \_\_\_\_\_ square feet  
 Augmentation - Additional floor space requirements - enclosed \_\_\_\_\_ square feet  
 Augmentation - Additional floor space requirements - non-enclosed \_\_\_\_\_ square feet  
 Provide via attachment a proposed equipment floor plan layout which will aid BellSouth's understanding of the space requirements for the equipment to be placed in the location.

BellSouth Reference No. BRHMAALCP-SAU-01

# EXPANDED INTERCONNECTION APPLICATION AND FIRM ORDER DOCUMENT

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## EQUIPMENT TO BE INSTALLED OR REMOVED

Complete columns 1 through 11 for all equipment to be installed or removed. Duplicate this table as required.

1	2	3	4	5	6	7	8	9	10	11
Rack No. (A)	Vendor/Manufacturer & Contact Number	Model No.	Description	Existing Quantity	Add	Remove	Total Quantity	Total Heat Dissipation (WATTS)	Total -48V DC Power Requirements (AMPS)	NEBS Yes/No (B)
B1, B2	Nortel Networks *	ANX	Access Node Express	0	2	0	2	1600 watts	20 amps	Yes
C1	Nortel Networks *	HDTI	Host Digital Terminal	0	1	0	1	800 watts	10 amps	Yes
A5	Xylan *	OM9	Omniswitch 9	0	1	0	1	500 watts	5 amps	Yes
A2, A3	DSX-ADC *	DSX	84 position DSX	0	2	0	2	0	0.1 amp	Yes
A4	Nortel DMT 300 *	DMT300	M13 multiplexer	0	1	0	1	400 watts	5 amps	Yes
D1, D2	Siecor MDF *	130C41 28L011	Versablock MDF	0	1	0	1	0	0	Yes
A1	C & D *	PDS3639	PDF	0	1	0	1	0	0	Yes
	*Frank Hoffmann 864.678.7756									

A: Show rack number on the attached floor plan layout.

B: Does this equipment meet the following Bell Communications Research Network Equipment-Building Systems (NEBS) requirements?

- Criteria Level 1 requirements as outlined in the Bellcore Special Report SR-3580, Issue 1.
- Equipment design spatial requirements per GR-63-CORE, Section 2.
- Thermal heat dissipation per GR-063-CORE, Section 4, Criteria 77-79.
- Acoustic noise per GR-063-CORE, Section 4, Criterion 128.
- Applicable National Electric Code requirements.

 Enter a YES or NO. If NO, attach a separate document listing specific explanations for each equipment type and reasons for NEBS and/or National Electric Code noncompliance.

# EXPANDED INTERCONNECTION APPLICATION AND FIRM ORDER DOCUMENT

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## 6. EQUIPMENT RACK/BAY REQUIREMENTS FOR NON-ENCLOSED EQUIPMENT

Completion of this section is not required if the enclosure option is selected.

\_\_\_\_\_ Rack(s) for initial equipment installation.      Quantity of racks: \_\_\_\_\_  
 \_\_\_\_\_ Add rack(s) to existing arrangement.      Quantity of racks: \_\_\_\_\_  
 \_\_\_\_\_ Existing rack location: \_\_\_\_\_  
 \_\_\_\_\_ Remove rack(s) from an existing arrangement.      Quantity of racks: \_\_\_\_\_  
 \_\_\_\_\_ Rack addition not required for this application.

	Rack 1	Rack 2	Rack 3	Rack 4	Rack 5	Rack 6	Rack 7	Rack 8
Rack Width								
Spacer Width*								
Rack Depth								
Rack Height			—					
Location								
Equipment Overhang	F   R	F   R	F   R	F   R	F   R	F   R	F   R	F   R

\* If required.

Equipment Overhang: F = Front, R = Rear. Indicate the number of inches that the equipment depth exceeds the rack depth on the front and/or rear of the rack, if applicable.

 Total footprint area (width x depth) of all racks (and spacers) to be installed for this application  
 \_\_\_\_\_ Square Feet

## 7. -48V POWER AND GROUNDING

Completion of this section is required if -48V telecommunications equipment power is to be provided by BST. Power plant construction requirements and costs will be based upon the information provided. BST can provide -48V DC feeders configured to power equipment installed as part an isolated single point ground or as part of the building integrated ground plane. Isolated ground power options are addressed in section 7B. Integrated ground power options are in section 7C.

7A. Does any of this equipment require an isolated ground plane and associated power supply grounding as described in Bellcore Technical Reference TR-NWT-000295 and BellSouth Engineering and Installation Standards for Central Office Equipment TR-73503?

7A1. Yes \_\_\_\_\_ No X If yes, complete section 7B.

Will any of this equipment be installed (and grounded) as part of the building integrated ground plane (i.e. not part of an isolated ground plane)?

7A2. Yes X No \_\_\_\_\_ If yes, complete section 7C.

7. -48V POWER AND GROUNDING continued from page 3.

**EXPANDED INTERCONNECTION APPLICATION  
AND FIRM ORDER DOCUMENT**BSTEI-1-P  
Page 4 of 10  
3/9/98**7B. Power Feeders for Equipment Installed as Part of an Isolated Ground Plane**

If equipment requires TR-000295 compliant isolated ground plane, the collocator **must** provide Battery Distribution Fuse Bay, Power Distribution Frame, or similar power distribution equipment for distributing power to the equipment to be installed on the isolated ground plane. This BDFB/PDF must be dedicated to the isolated ground equipment. If integrated ground equipment is also installed it must utilize one of the power options described in section 7C.

Specify the quantity of the BST provided isolated ground power feeders to the collocator provided BDFB/PDF. State quantities in multiples of 2 for redundant "A" and "B" feeder pairs (i.e., 2 feeders = 1 A feeder and 1 B feeder. Note: All BST provided power feeders to BDFBs/PDFs will be rated at 180 Amps protected at the BST power board by 225 amp circuit breakers.

Existing	Additional	Total	Terminating BDFB/PDF Rack No. per collocator provided equipment layout
			—

BST will provide power feeder cable support structure between the BST power board and the collocator equipment enclosure. BST will connect the feeder to the BST power board and run the feeder to the enclosure. The collocator's vendor will be responsible for constructing power cable support structure and completing the feeder installation within the enclosure and terminating the cable at the collocator provided BDFB/PDF.

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3/9/987. **-48V POWER AND GROUNDING** continued from page 4.7C. **Power Feeders for Equipment installed as Part of the Building Integrated Ground Plane**

Collocator may provide or request BST to provide Battery Distribution Fuse Bay, Power Distribution Frame, or similar power distribution equipment for distributing power to integrated ground equipment.

7C1. **Collocator Provided BDFB/PDF**

If collocator will provide BDFB/PDF, specify the quantity of the BST provided integrated ground power feeders to the collocator provided BDFB/PDF. State quantities in multiples of 2 for redundant "A" and "B" feeder pairs. (i.e., 2 feeders = 1 A feeder and 1 B feeder). Note: All BST provided power feeders to BDFBs/PDFs will be rated at 180 Amps protected at the BST power board by 225 amp circuit breakers.

Existing	Additional	Total	Terminating BDFB/PDF Rack No. per collocator provided equipment layout
0	2	2	A1

BST will provide power feeder cable support structure between the BST power board and the collocator equipment enclosure. BST will connect the feeder to the BST power board and run the feeder to the enclosure. The collocator's vendor will be responsible for constructing power cable support structure and completing the feeder installation within the enclosure and terminating the cable at the collocator provided BDFB/PDF.



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3/9/98**7. -48V POWER AND GROUNDING** continued from page 5.

- 7C2. BST Provided BDFB or Miscellaneous Power Board Fuse Positions.** (See note.)  
Complete the following table for all fuse positions to be provided by BST.

BST Provided BDFB Fuse Position Quantity	Protection Device Rating (amperes)
State quantity in multiples of 2, one "A" and one "B"	(Max 60 amps)

Note: Some BST -48V power boards are equipped with miscellaneous fuse positions. These fuse positions may be made available for use with collocated equipment in lieu of BDFB fuse positions. BST and collocator responsibilities as described in this section shall apply to the use of these fuse positions.

BST will provide fuse positions as requested. **The collocator must provide the protection devices (fuses) and the appropriately sized power feeders between the BDFB or power board and the collocator provided equipment.** BST will provide power cable support structure between the BST provided BDFB/power board and the collocator's enclosure (or equipment if no enclosure is requested). The collocator's vendor is responsible for the installation of all cable support structure within a collocation enclosure. The maximum rating for a protection device to be placed in a BST provided BDFB or misc. power board fuse position is 60 amps. Typical sizes are 10, 15, 30, 45 and 60 amps. Protection devices should be sized at 1.5 times the maximum load. Quantities should be specified in multiples of 2 for 1 "A" and 1 "B" fuse position.

It is recommended that all collocated equipment arrangements be configured with a power disconnect capability, either internal to the collocated equipment frame(s) or via a collocator provided fuse panel. If no power disconnect is provided, a request will have to be submitted to BST to disconnect power at the BST provided fuse or breaker whenever power must be removed from the equipment.

**7D. Framework Ground**

BST will provide an interconnection point (ground bar or ground cable extension) for connecting the collocator provided equipment framework ground to the building principal ground. BST will extend the floor framework ground connection to a common collocation area ground bar or will extend a framework ground cable to the collocation enclosure for grounding all equipment to be grounded through the building integrated ground plane. If a ground bar is placed in the collocation area (adjacent to a collocation enclosure) the collocator will be responsible for extending a single framework ground connection from the enclosure to the BST provided bar.

If BST provides -48V battery and battery return feeds to collocated equipment grounded through a TR-000295 compliant isolated ground plane, the collocator's certified vendor will be responsible for engineering and installing framework grounds from the equipment to the BST provided ground window.

Specific grounding arrangements should be clarified during the BST-collocator coordination meetings.

# EXPANDED INTERCONNECTION APPLICATION AND FIRM ORDER DOCUMENT

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## 8. ENGINEERING AND INSTALLATION VENDOR(S) Complete for Firm Order.

T E = Transmission Equipment; S E = Switching Equipment

Equipment Type & Vendor Function	BST Certified Vendor Name	BST Certified Vendor Contact	BST Certified Vendor Phone #
T E - Engineering	Nortel Networks	Jim Baran	972.685.5594
T E - Installation	Nortel Networks	Jim Baran	972.685.5594
S E - Engineering			
S E - Installation			

## 9. COLLOCATION INTERCONNECTION REQUIREMENTS

 Do you plan to directly interconnect collocation arrangement(s) in this location? Yes \_\_\_\_\_ No X  
 Type of cable to be used to interconnect collocation arrangements: Copper \_\_\_\_\_ Fiber \_\_\_\_\_

The following table must be completed for each requested direct interconnection. BST will provide cable support structure, if feasible, for the interconnection of two collocation arrangements occupying non-contiguous space.

Collocation No.	Controlling Collocation		Interconnected Collocation			Type	Quantity of Circuits	Optical Interconnect
	New	Existing	Virtual	Physical	Owner			
	Rack Loc. or "ENC"	Rack Loc. or Enc. Loc.	Rack Location	Rack Loc. or Enc. Loc.		DS0, DS1, DS3, Optical	Capacity of cable	Preferred Conductor Cable (or Patch Cord (P

When separately owned collocation arrangements are to be interconnected, the arrangement of the owner requesting the interconnection shall be the "Controlling Collocation". When commonly owned collocation arrangements are to be interconnected, the owner should designate one as the "Controlling Collocation". **NOTE:** The "controlling" owner will serve as the BST contact on all issues related to the interconnection and will be billed by BST for any and all applicable charges.

All abandoned/disconnected interconnection facilities must be removed from BST cable support structure by the collocator's certified vendor when the interconnected equipment is disconnected or removed. Identify the collocation number from the previous table to be removed per this application:

# EXPANDED INTERCONNECTION APPLICATION AND FIRM ORDER DOCUMENT

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## 10. FIBER CABLE INFORMATION

Collocator provided & owned fiber entrance facilities Yes \_\_\_\_\_ No X

A. Complete the table below for each fiber entrance cable to be installed or removed.

- ☐ Add fiber entrance cable(s) for initial installation.  
☐ Add fiber entrance cable(s) to existing arrangement.  
☐ Fiber entrance cable not required for this application.  
☐ Fiber entrance cable to be removed.

Cable #	Outside diameter (in.)	Size of fiber cable	Weight (lb/kft)	Metallic/Dielectric	Cable Tensile Load (lb/f)

**Note 1:** Outside plant cable must meet the requirements in Bellcore GR-20-CORE or TR-NWT-000020.

**Note 2:** If multiple entry is requested, please show 2 cables on the fiber entrance cable table. Multiple entry availability will be provided in response to an application.

B. Complete the table below for each fiber riser cable to be installed or removed.

- ☐ Add fiber riser cable(s) for initial installation.  
☐ Add fiber riser cable(s) to existing arrangement.  
☐ Fiber riser cable not required for this application.  
☐ Fiber riser cable to be removed.

Cable #	Outside diameter (in.)	Size of fiber cable	Weight (lb/kft)	Sheath Type	Cable Tensile Load (lb/f)
				Dielectric	
				Dielectric	

**Note 1:** Pre-terminated, dielectric, fire retardant riser cable should be provided. Riser cable must meet the requirements in Bellcore GR-409-CORE.

**Note 2:** If multiple entry is requested, please show 2 cables on the riser cable table. Multiple entry availability will be provided in response to an application.

**Note 3:** Abandoned/disconnected fiber riser cable must be removed by the collocator's certified vendor at the time the associated equipment is removed.

C. Additional information: ☐ Multiple entry points requested.  
☐ Microwave entrance requested.

# EXPANDED INTERCONNECTION APPLICATION AND FIRM ORDER DOCUMENT

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## 11. EQUIPMENT WIRING REQUIREMENTS

Initial installation ☒ Equipment Addition \_\_\_\_\_ Wiring changes \_\_\_\_\_

Enter the number of DS0 2 wire, DS1, DS3, and/or fiber lowspeed equipment ports that will be wired to the POT.

DS0 POT DS0 2 Wire	DS1 POT DS1 Connections	DS3 POT DS3 Connections	Optical POT Fiber Connections
1400	32	3	0

**Note:** It is recommended that all lowspeed ports not used for connection to other equipment be wired to the POT.

Will local trunks and/or unbundled loops be ordered for interconnection to this physical arrangement?  
☒ Yes \_\_\_\_\_ No (An interconnection agreement between BellSouth and your company is required for interconnection of unbundled loops into a collocation arrangement.)

## EQUIPMENT WIRING DISCONNECTS

All abandoned/unused cable connections to the POT must be removed by the collocater's certified vendor when the associated equipment is removed. Indicate the type, quantity, and POT bay location of the circuits to be disconnected. For partial removals, attach a cable and pair and/or T1TIE/T3TIE inventory identifying specific connections to be disconnected.

DS0 POT DS0 2 Wire		DS1 POT DS1 Connections		DS3 POT DS3 Connections		Optical POT Fiber Connections	
Quantity	POT	Quantity	POT	Quantity	POT	Quantity	POT

Additional information:

**EXPANDED INTERCONNECTION APPLICATION  
AND FIRM ORDER DOCUMENT**BSTEI-1-P  
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3/9/98**12. CONTACT INFORMATION**EQUIPMENT WIRING: Name *Ron Kirby* Telephone # *864.370.7676*Facsimile # *864.271.7810* Mobile # *864.414.4168* E-mail/Internet Address *rkirby@trivergent.com*TECHNICAL: Name *Ron Kirby* Telephone # *864.370.7676*Facsimile # *864.271.7810* Mobile # *864.414.4168* E-mail/Internet Address *rkirby@trivergent.com*LOCAL COORDINATION: Name *Ron Kirby* Telephone # *864.370.7676*Facsimile # *864.271.7810* Mobile # *864.414.4168* E-mail/Internet Address *rkirby@trivergent.com*BUILDING ACCESS: Name *Ron Kirby* Telephone # *864.370.7676*Social Security Number (Required for issuing building access cards.) *246.86.9196*Facsimile # *864.271.7810* Mobile # *864.414.4168* E-mail/Internet Address *rkirby@trivergent.com***13. DESIGN LAYOUT RECORD (DLR) CONTACT INFORMATION****A: COLLOCATION ARRANGEMENT IDENTIFICATION CIRCUIT**DLR Contact Name/Title *Frank Hoffmann/V.P. Network Ops. - Collocation* Telephone # *864.678.7756*Address *200 N. Main St., Ste. 303* City/State/Zip *Greenville, SC 29601*E-mail/Internet Address *fhoffmann@trivergent.com*☐ Use mechanized DLR capability via a DRC code. Enter 3 digit DRC code \_\_\_\_\_☒ Use regular mail to provide DLR to the design contact shown above.**B: TIE (T1 & T3) CARRIER(S)**DLR Contact Name/Title *Frank Hoffmann/V.P. Network Ops. - Collocation* Telephone # *864.678.7756*Address *200 N. Main St., Ste. 303* City/State/Zip *Greenville, SC 29601*E-mail/Internet Address *fhoffmann@trivergent.com*☐ Use mechanized DLR capability via a DRC code. Enter 3 digit DRC code \_\_\_\_\_☒ Use regular mail to provide DLR to the design contact shown above.**Note!** Please be sure the DRC code provided is correct. An incorrect code will result in improper distribution of the DLR, possibly causing a delay in the initial ordering of service.

If you do not have mechanized DLR capability, and would like information on how to obtain mechanized DLR capability, contact your Account Executive.

**13. C: CABLE & PAIR (DS0)**

BellSouth Reference No. \_\_\_\_\_



**EXPANDED INTERCONNECTION APPLICATION  
AND FIRM ORDER DOCUMENT**

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Contact Name/Title *Ron Kirby* \_\_\_\_\_ Telephone # *864.370.7676* \_\_\_\_\_

Address *200 N. Main St., Ste. 303* \_\_\_\_\_ City/State/Zip *Greenville, SC 29601* \_\_\_\_\_

E-mail/Internet Address *rkirby@trivergent.com* \_\_\_\_\_

**14. BILLING INFORMATION**

BAN (Billing Account Number - Provided by BellSouth) \_\_\_\_\_

Billing Name *TirVergent Communications, Inc.* \_\_\_\_\_  
(Indicate the legal business name as it should appear on the monthly billing statement.)

Bill Department/Title *Accounts Payable* \_\_\_\_\_

Bill Address *200 N. Main St., Ste. 303* \_\_\_\_\_ City/State/Zip *Greenville, SC 29601* \_\_\_\_\_

Billing Contact Name *Matt Smith* \_\_\_\_\_

Address *200 N. Main St., Ste. 303, Greenville, SC 29601* \_\_\_\_\_

Telephone Number *864.370.4506* \_\_\_\_\_ Facsimile Number *864.271.7810* \_\_\_\_\_

List Billing Account Number(s) for other BellSouth communication service(s) *205Q823695695, 502Q813694694, 843Q823694694, 615Q823694694, 318Q823694694*

**15. ATTACHMENTS** List attachments and the number of pages for each attachment. Provide rack equipment drawings for the floor plan layout.

Attachment 1: *Site Layout* \_\_\_\_\_

Attachment 2: \_\_\_\_\_

Attachment 3: \_\_\_\_\_

Attachment 4: \_\_\_\_\_

Remarks: \_\_\_\_\_

**EXPANDED INTERCONNECTION APPLICATION  
AND FIRM ORDER DOCUMENT**BSTEI-1-P  
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3/9/98**16. TECHNICAL COMPLIANCE**

Applicant certifies that equipment is in compliance with the following industry standards:

- Criteria Level 1 requirements as outlined in the Bellcore Special Report SR-3580 Issue 1.
- Equipment design spatial requirements per GR-63-CORE, Section 2.
- Thermal heat dissipation per GR-63-CORE, Section 4, Criteria 77 - 79.
- Acoustic noise per GR-63-CORE, Section 4, Criterion 128.
- Applicable National Electric Code requirements.

I hereby certify that the equipment listed on page 2 in this document meet the industry standards for safety and compatibility. For equipment which is noncompliant, attached is documentation describing the equipment, including exceptions or deviations from the above standards.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Print Name *Frank Hoffmann* \_\_\_\_\_ Title *V.P. Network Operations - Collocation*Company *TirVergent Communications, Inc.* \_\_\_\_\_**Use of Space in Central Offices**

From time to time BellSouth may require access to space occupied by collocator. BellSouth retains the right to access such space for the purpose of making equipment and building modifications, e.g., running, altering or removing racking; ducts; electrical wiring; HVAC; and cables. BellSouth will give reasonable notice to collocator when access to collocation space is required and collocator may elect to be present whenever BellSouth performs work in the collocation space. It is agreed that collocator will not bear any of the expense associated with this work.

**17. Dates are negotiated during the Firm Order process. For planning purposes, you may indicate your**desired **Space Acceptance** date: *August 1, 1999* \_\_\_\_\_ anddesired **Commencement** date: *September 1, 1999* \_\_\_\_\_ for this arrangement.

The **Space Acceptance** date will be the date that BellSouth's floor space and infrastructure construction are complete.

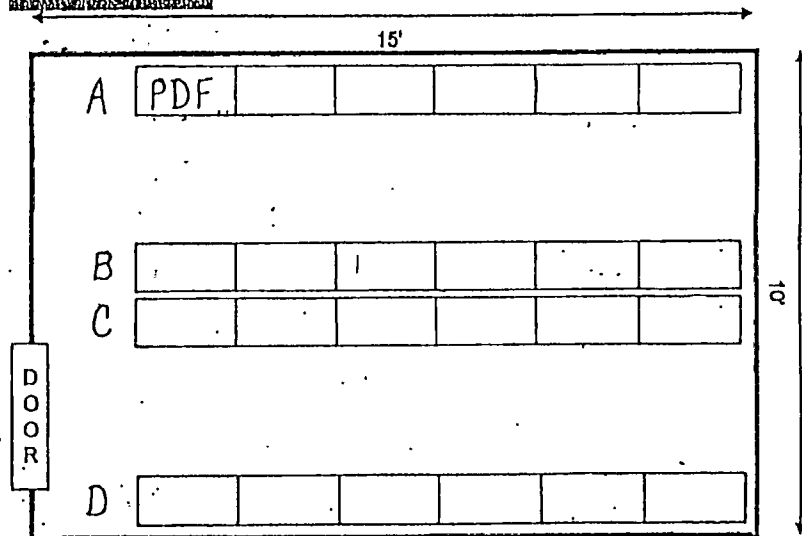
The **Commencement** date will be the date that the collocator's transmission and/or switch equipment are operational and ready for service. Notification of the commencement date should be provided by the collocator to BellSouth in writing.

**18. BSTEI-1-P PREPARATION DATE**

Inquiry/Application Preparation Date \_\_\_\_\_

Firm Order Preparation Date \_\_\_\_\_

15' x 10'





## EXHIBIT 2

Project Reference Number: BRHMALCP-SAU-01

Response Expiration Date: October 21, 1999

**State Information**

**I. State Coordinator Data**

State Interdepartmental Coordinator	Charles McCormack@205.972.2890
Central Office Manager / Representative	Beverly Bowles@205.856.2843

**Fiber Cable Information**

**II. Contact Data**

Outside Plant Construction Supervisor (PCS)	
Outside Plant Manhole Access	
Master Contractor	

**III. Manhole Data**

Diverse Fiber Entrance Access to Wire Center	Available: Yes <input type="checkbox"/> No <input type="checkbox"/>
Manhole Address	Cable Distance Manhole to CO Point of Interconnection
Manhole #1:	Feet
Manhole #2:	Feet
Manhole #3:	Feet

Note: Distances shown are estimates.

**IV. Riser Cable Length Data**

Connectorized Fire Retardant Riser Cable	CO Point of Interconnection to EIS Location
Riser Cable #1	Feet
Riser Cable #2	Feet

Note: Distances shown are estimates.

**V. Tie Cable Length Data**

BST Termination	# TIES	Length - EIS to BST	
DSO Distribution Frame	1400	175 Feet	
DSX - 1	32	150 Feet	
DSX - 3	3	175 Feet	
LGX (Fiber Cross Connection)	6	150 Feet	

**Recommended Distribution Frame (DF) for termination of DS0 tie cables from POT: TMDF F11**

\* POT = Point of Termination

DSX 1 Note: The Collocator must set the collocation transmission equipment to pre-emphasis options required to deliver a DS-1 level signal, as described in BellSouth TR 73572, to the BellSouth DSX.

DSX-3 Note: The Collocator may be required to set the collocated equipment Line Build Out option when total cable distances from the BellSouth DSX-3 to the EIS location are less than 225 feet. Refer to BellSouth TR 73572

Note: Distances shown are estimates. Cable installation to the POT Bay is the responsibility of your BST Certified Vendor.

Please direct questions to: Eddie Trant, Regional Collocation Manager  
Office 205.321.5060 FAX 205.321.5058 Internet - Eddie.Trant@bridge.bellsouth.com

### Environment Data

#### VI. Environment Data / Space

Requested Space Size: <u>150</u> Square Feet Available <u>X</u> Not Available <u>    </u>	Enclosed: <u>150</u> Square Feet Available Non-enclosed: <u>    </u> Square Feet Available
Floor Plan provided: Yes <u>X</u> No <u>    </u>	

Note: See floor plan for additional information.

Note: Please plan to post emergency contact names and telephone numbers on the exterior of the physical space enclosure or attach directly to the racking of an unenclosed physical arrangement. From time to time, BellSouth may require access to space occupied by Collocator. BellSouth retains the right to access such space for making equipment and building modifications, e.g., running, altering or removing racking; ducts; electrical wiring; HVAC; and cables. BellSouth will give reasonable notice to Collocator when access to collocation space is required. Collocator may elect to be present whenever BellSouth performs work in the collocation space. The Collocator will not bear any of the expense associated with this work.

#### VII. Environment Data / Miscellaneous

Location within Wire Center <u>    </u>	<u>1<sup>st</sup></u> Floor-Collocation Common Area Room Number <u>    </u>
7 Day & 24 Hour Entrance Access <u>    </u>	<u>X</u> No Escort Required <u>    </u> Paid Escort Required
Rest Room Access Availability <u>    </u>	<u>X</u> Available without Escort <u>    </u> Available with Escort <u>    </u> Not Available
Parking <u>    </u>	<u>X</u> On site parking available ; <u>    </u> On street parking available

Note: Access to the wire center and the Physical Collocation area requires proper identification at all times. Your company issued picture identification is required. **Access will be denied to anyone without proper identification. There will be no exceptions to this policy.**

Interval and Cost Summary

The **Space Acceptance** date will be the date that BellSouth's floor space and infrastructure construction are complete.

The preparation interval estimate for space acceptance is 90 days following a Bona Fide Firm Order and coordination team conference call meeting. At the meeting, we suggest having your collocation coordinator and the chosen BellSouth Certified Vendor present to provide input into the establishment of critical dates. An estimated preparation and construction interval includes average build outs, but excludes government permit intervals. BellSouth cannot predict what the actual interval is for the attainment of local government permits or Collocator initiated changes to the project.

In accordance with the terms, conditions, and rates that appear in the executed BellSouth Physical Collocation Agreement for State Communications we submit the following costs for your application.

**IX. Cost Summary**

Line Item	Item Total	Prepayment Total
Item 1: Space Construction Fee (Enclosure)		
Item 2: Space Preparation See Cost detail below	\$65,632.00	\$32,816.00
Item 3: Cable Installation		
Total		\$32,816.00 Prepayment Due

Additional Engineering hours estimate	40 Hours
---------------------------------------	----------

Note: Some information within this response is estimates of the project work requirements. Actual distances, costs, or intervals may differ from the estimate shown and are dependent upon the ultimate work done. Final cost calculations follow completion of the project.

**X. Supporting Space Preparation Cost Data**

Line Item	Prorate Amount
Space Construction	\$ 4,795.00
Frame, Cable, Cable Support, etc.	\$ 7,152.00
Power*	\$ 53,685.00
Estimated Space Preparation Fee Total - Item 2 above	\$ 65,632.00

Project Reference Number: BRHMALCP-SAU-01

Response Expiration Date: October 21, 1999

Space Construction Total Costs	Total Amounts
General Construction	\$ XXXX.XX
Architecture & Engineering Fees	\$ XXXX.XX
Heating, Air Conditioning & Ventilation (HVAC)	\$ XXXX.XX
Electrical	\$ XXXX.XX
Abatement	\$ XXXX.XX
Other (describe)	\$ XXXX.XX
*Standby Power and Power Plant Construction Charge	\$ XXXX.XX
Notes: /Enter any specific to the project critical notes.	

**CUSTOMER ACCEPTANCE DOCUMENT  
CAGELESS PHYSICAL COLLOCATION**

10/14/99  
Page 1 of 1

This agreement represents approval and acceptance by the interconnecting party (Customer) of the space provided in the BellSouth Telecommunications Central Office identified below:

Company Name TriVergent Communications, Inc.

Reference Number BRHMALCP-SAU-01 Office CLLI Code BRHMALCP

Street Address 41 20th Ave NW

City / State / Zip Birmingham, AL 35215

The signature of the customer in the space provided below represents the following:

1. Customer has inspected the space(s) designated for their telecommunications equipment.
2. Customer is satisfied that the space(s) is/are completed in a satisfactory, workman-like manner.
3. Customer accepts space(s) as appropriate for their business purpose.
4. Customer acknowledges that they will be charged for the space and interconnecting services beginning with the date on which BellSouth releases the Collocation Space for occupancy or on the date the customer first occupies the Collocation Space, whichever is sooner.

**APPROVED / ACCEPTED:**

By: <u>FRANK HOFFMANN</u>	<u>[Signature]</u>	<u>V.P. Network Ops</u>	<u>2/24/00</u>
Collocator (Print Name)	Authorized Signature	Title	Date
By: <u>W.G. Johnson</u>	<u>[Signature]</u>	<u>MANAGER CSCM</u>	<u>02-24-00</u>
BST - CSCM Rep. (Print Name)	Authorized Signature	Title	Date
By: _____	_____	_____	_____
BST - CO Opns Rep. (Print Name)	Authorized Signature	Title	Date

Remarks EXTEND POWER CABLE RACK

# EXHIBIT 3

(Contains Proprietary Information)

## EXHIBIT 4



Collocation > WorkList > Physical Application > View

[Navigational Help](#)

Ref Code: BRHMALCP-PA-SAU-100A01

**Important!\*\*\***Instructions for completion of this physical collocation application are located [here](#). (previously the BSTEI-1P-A Ins. .DOC) Please comply with the criteria contained in the instructions for completion of each item in this application document.

<input type="radio"/> Tariff	<input checked="" type="radio"/> Contract
------------------------------	---

1. CUSTOMER INFORMATION

Company Name	TRIVERGENT		ACNA SAU
Company Address	301 NORTH MAIN STREET. Room SUITE 5000		
City/State/Zip	GREENVILLE SC 29601		
<b>COLLOCATION PROJECT COORDINATOR</b>			
Name	Jerry Willis		
Mailing Address	301 NORTH MAIN STREET. Room SUITE 5000		
City/State/Zip	GREENVILLE SC 29601		
Phone #	864-331-8176	Pager #	
		Fax #	864-331-1466
E-mail:	jwillis@nuvox.com (@xx.com)		

2. REQUESTED LOCATION

Wire Center Name	BHAM-CENTER PT
Street Address	41 20TH AVE NW
CLLI Code	BRHMALCP
City/State/Zip	BIRMINGHAM AL 35215

**Note:** The information in this section has been populated based on the CLLI entered when this application was created. If the **REQUESTED LOCATION** is not correct, select the Cancel option at the top of the form. Using the correct CLLI code, create the application again from the Collocation Worklist (Home Page).

3. TYPE OF INTERCONNECTION ACTIVITY

Identify the space option desired for new or additional floor space requirements. If existing space is being vacated identify the space option applicable to the arrangement.

- ☐ Cage - to be constructed by BellSouth
- ☐ Cage - to be constructed by Collocator's Vendor
- ☐ Cageless Conventional
- ☐ Cageless Non-Conventional (Isolated Grounding, Integrated Racking Only)

**Caged or Cageless Non-conventional space requirements:**

Identify in the table below existing floor space currently occupied, new or additional floor space requirements or space that will be vacated per this application, and the total space desired.

Space to be vacated (sq.ft.)	-150
------------------------------	------

**Note:** If you have more than 1 caged space arrangement within this CO and will be vacating only part of your space, please describe the location within the CO of the space that will be vacated.

**Important:** Provide via attachment a proposed equipment floor plan layout, including all equipment and aisle dimensions.

## 5. CAGELESS - CONVENTION LINEUP REQUIREMENTS

**5A. New cageless(conventional lineup) space requirements:** Complete this table when requesting space for new equipment or when reserving space for future equipment. Please group racks by depth. Duplicate this page as required to reflect all new space requirements.

[illegible]

**Note 1:** (Column 5 - Spacer Width)

- The total of Column 5 equals the total width of all spacers required for the installation.

**Note 2:** (Column 3 - Depth, Column 4 - Rack Width)

*Refer to BSTEI-1P-A Ins. prior to completing the Depth and Rack Width sections of Section 5 tables.*

When reserving space for future racks the maximum depth of the equipment to be placed within the racks must be considered. This information is required to ensure that adequate floor space is available for the future equipment, incorrect information may result in reserved space that may not meet later needs.

**5B. Changes in use of existing space:** Complete this table to reflect changes in the use of space previously assigned. Please group racks by depth. Use this table to reflect the installation of equipment in space previously reserved, replacement of existing equipment, or removal of equipment from space that is to be reserved for future use. Duplicate this table as required.

1	2	3	4	5	6A	6B	6C	7
Rack # (from Sec. 6)	Rack Depth inches	Rack Width inches	Spacer Width inches	Rack + Spacer Width Col. 3 + Col. 4	Check Column 6A, 6B, or 6C			Relay Rack Location
					Add rack to reserved space	Replace existing equipment	Remove rack & retain space	
				0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Note 1:** (Column 2 - Depth, Column 3 - Rack Width)

*Refer to BSTEI-1P-A Ins. prior to completing the Depth and Rack Width sections of Section 5 tables.*

When reserving space for future racks the maximum depth of the equipment to be placed within the racks must be provided. This information is required to ensure that adequate floor space is available for the future equipment, incorrect information may result in reserved space that may not meet later needs.

**5C. Space to be vacated:** Use this table to reflect all cageless space to be released either by removal of existing equipment, or by releasing space previously reserved for future use. Duplicate this table as required.

1	2	3	4
Current use of Space check Col. 1 or 2		Rack # (from Sec. 6 if currently equipped with rack)	Relay Rack Location
Equipped with Rack	Reserved for future use		Provide relay rack location of space to be vacated
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		

## 6. EQUIPMENT TO BE INSTALLED OR REMOVED

Complete columns 1 through 11 for all equipment to be installed or removed.

1. Rack Number(A)		B1,B2							
2. Vendor /Mfc & Contact#		Nortel Networks				3. Model Number		ANX	
4. Description		Access Node Express							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
					9. List 1 (Nominal)		10. List 2 (Worse Case)		
			Per Unit	Total	Per Unit	Total	Per Unit	Total	
2	-2	0	1600	0	20	0	20	0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		C1							
2. Vendor /Mfc & Contact#		Nortel Networks				3. Model Number		HDT1	
4. Description		Host Digital Terminal							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
					9. List 1 (Nominal)		10. List 2 (Worse Case)		
			Per Unit	Total	Per Unit	Total	Per Unit	Total	
1	-1	0	800	0	10	0	10	0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		A5							
2. Vendor /Mfc & Contact#		Xylan				3. Model Number		OM9	
4. Description		Omniswitch 9							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
					9. List 1 (Nominal)		10. List 2 (Worse Case)		
			Per Unit	Total	Per Unit	Total	Per Unit	Total	
1	-1	0	500	0	5	0	5	0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		A2,A3							
2. Vendor /Mfc & Contact#		DSX-ADC				3. Model Number		DSX	
4. Description		84 Position DSX							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
					9. List 1 (Nominal)		10. List 2 (Worse Case)		
			Per Unit	Total	Per Unit	Total	Per Unit	Total	
2	-2	0		0	.05	0	.05	0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		A4							
2. Vendor /Mfc & Contact#		Nortel DMT 300				3. Model Number		DMT300	
4. Description		M13 Multiplexer							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
			Per Unit	Total	9. List 1 (Nominal)		10. List 2 (Worse Case)		
					Per Unit	Total	Per Unit	Total	
1	-1	0	400	0	5	0	5	0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		D1,D2							
2. Vendor /Mfc & Contact#		Siecor MDF				3. Model Number		130C41 28L011	
4. Description		Versablock MDF							
5. Exist Qty -	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
			Per Unit	Total	9. List 1 (Nominal)		10. List 2 (Worse Case)		
					Per Unit	Total	Per Unit	Total	
1	-1	0		0		0		0	Yes <input checked="" type="checkbox"/>

1. Rack Number(A)		A1							
2. Vendor /Mfc & Contact#		C&D				3. Model Number		PDS3639	
4. Description		PDF							
5. Exist Qty	6. Add (+) or Rm (-)	7. Tot Qty	8. Heat Dissipation (Watts)		-48V DC Power Reqmts (Amps)				11. NEBS Yes/No (B)
			Per Unit	Total	9. List 1 (Nominal)		10. List 2 (Worse Case)		
					Per Unit	Total	Per Unit	Total	
1	-1	0		0		0		0	Yes <input checked="" type="checkbox"/>

Heat Dissipation(Watts) Total	0
List 1 (Nominal) Total	0
List 2 (Worse Case) Total	0

## Section 6 Remarks

--	--

Note 1: (Column 1 - Rack#)

For the Equipment Cage and Cageless Non-Conventional space options show rack number(s) on an attached floor plan layout. To reserve rack space with the Cageless space option list rack number(s) and write "Reserved" in the Description column. Bays/cabinets should meet NEBS requirements for overhead cable rack and cable loadings.

**Note 2: (Column 11 - NEBS)**

Enter Yes if this equipment meets Network Equipment-Building Systems(NEBS) requirements for Criteria Level 1 requirements as outlined in the Telcordia Special Report SR-3580, Issue 1

Enter No if this equipment does not meet the above NEBS requirements.

Attach a separate document listing each non-compliant equipment unit and the specific NEBS Level 1 criteria with which the equipment does not comply.

**7. -48 POWER AND GROUNDING**

Indicate which of the following apply:

- ☐ Power requirements for initial installation.
- ☐ Add/Change power requirements for an existing arrangement augmentation.
- ☒ Arrangement augmentation, no additional power required

**Completion of this section is required if -48V telecommunications equipment power is to be provided by BST. Refer to BSTEI-IP-A instructions for a complete description of available power options and responsibilities.**

7A. ☐ Yes ☒ No Does any of this equipment require an isolated ground plane and associated power supply grounding as described in Bellcore (Telcordia) Technical Reference TR-NWT-000295 (a.k.a. TR-295) and BellSouth Engineering and Installation Standards for Central Office Equipment TR-73503? **If Yes, complete section 7B.**

☒ Yes ☐ No Will any of this equipment be installed (and grounded) as part of the building integrated ground plane (i.e. not part of an isolated ground plane)? **If Yes, complete section 7C.**

**7B. -48V DC Power for Equipment Installed as Part of an Isolated Ground Plane.**

Specify the quantity of BST provided isolated ground -48V DC breakers. BST will always provide redundant "A" and "B" breaker pairs. Order in multiples of two, i.e., for each "A" and "B" breaker pair order two breakers. All breakers are rated at 225 amps.

Existing	Additional	Total	Terminating BDFB/PDF Rack No. per collocater provided equipment layout	
		0		
		0		
		0		
		0		

**7C. -48V DC Power for Equipment installed as Part of the Building Integrated Ground Plane.**

Collocater may provide or request BST to provide Battery Distribution Fuse Bay, Power Distribution Frame, or similar power distribution equipment for distributing power to integrated ground equipment.

**Collocater Provided BDFB/PDF**

If collocater will provide BDFB/PDF, specify the quantity of the BST provided integrated ground - 48V DC breakers. BST will always provide redundant "A" and "B" breaker pairs. Order in multiples of two, i.e., for each "A" and "B" breaker pair order two breakers. All breakers are rated at 225 amps.

Existing	Additional	Total	Terminating BDFB/PDF Rack No. per collocator provided equipment layout
2	-2	0	A1
		0	
		0	
		0	

### BellSouth Provided BDFB or Miscellaneous Power Board Fuse Positions

Complete the following table for all fuse positions to be provided by BST.

Note: fuses must be engineered, reserved and provided by the Collocator's certified vendor.

BST Provided BDFB Fuse Position Quantity						Protection Device Rating (amperes)	
Existing		Additional		Total			
A Load	B Load	A Load	B Load	A Load	B Load		
				0	0		
				0	0		
				0	0		
				0	0		
				0	0		
						(Max 60 amps)	

### 8. DIRECT CONNECTION - CO-CARRIER CROSS CONNECTS

If covered in the collocation agreement, collocation arrangements may be directly interconnected without using BST cross connect facilities.

☐ Yes ☐ No Do you request a direct connection between non-contiguous collocation arrangement(s) in this location?

If yes, for each direct connection provide the following information:

- Identity of ownership of the equipment at each end of the connection
- Equipment rack locations at each end of the connection
- Type of service (DS0, DS1, DS3, Fiber)
- Copper or fiber cable and number of conductors
- If fiber, specify fiber building cable or patchcord

Direct Connection - Co-Carrier Cross Connects				
Ownership	Collocator A - Name, ACNA <input type="text"/>		Collocator B - Name, ACNA <input type="text"/>	
Equipment Rack Location	<input type="text"/>		<input type="text"/>	
Type of Service (check all that apply)	DS0 <input type="checkbox"/>	DS1 <input type="checkbox"/>	DS3 <input type="checkbox"/>	Fiber <input type="checkbox"/>
Type of Cable <input type="text"/>	Building or Patchcord <input type="text"/>	Outside Diameter <input type="text"/>	Number of Cables <input type="text"/>	Weight <input type="text"/>

8B. **Direct Connection - Non-contiguous Equipment:** Complete table if this collocation installation requires fiber interconnection of your non-contiguous racks or cabinets.

Equipment Rack Termination Point A	Equipment Rack Termination Point B	Building Cable or Patchcord	Number of Cables
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Important:** Fiber building cable is always required for interconnection between equipment located on separate floors.

#### 9. CABLE FACILITIES

Indicate the quantity for each type of cable to be installed.

Type of Cable	Number of Cables	Note
Fiber Entrance	<input type="text"/>	Complete 10A
Fiber Riser	<input type="text"/>	Complete 10B
Microwave Radio - Coax	<input type="text"/>	Complete 10C
Microwave Radio - Waveguide	<input type="text"/>	Complete 10D

9A. For Microwave Radio entrance facilities, indicate the type of contract applicable for your microwave antenna.

- ☐ Crown Antenna Mount Program  
☐ Microwave Collection  
☐ Other (Select "Other" if your microwave antenna will not be located on BellSouth property.)  
☐ Not Applicable

#### 10. CABLE INFORMATION - FIBER

- ☐ Yes ☐ No Collocator provided and owned fiber entrance facilities.  
☐ Yes ☐ No Collocator provided and owned microwave entrance facilities.  
☐ Yes ☐ No Multiple entry points requested. If yes, provide number:

10A. Complete the table below for each fiber entrance cable to be installed or removed.



	Cable Description	Outside Diameter	Number of Fibers	Weight (lb/kft)	Sheath (Metallic/Dielectric)

**Note 1:** Outside plant cable must meet the requirements in GR-20-CORE or TR-NWT-000020.  
**Note 2:** When abandoned/disconnected, fiber entrance cable must be removed by the collocator's certified vendor.

10B. Complete the table below for each fiber riser cable to be installed or removed.

	Cable Description	Outside Diameter	Number of Fibers	Weight (lb/kft)	Sheath (Metallic/Dielectric)

**Note 1:** If this application is for a subsequent collocation arrangement in a central office, additional riser cables may be required if the placement of the equipment for the subsequent order is not contiguous with the existing arrangements. BellSouth will notify the collocator if additional riser cables are required.

**CABLE INFORMATION - MICROWAVE RADIO**

10C. Complete the table below for each microwave coax cable to be installed or removed.

	Cable Description	Outside Diameter	Weight (lb/kft)	Sheath Type (Metallic/Dielectric)

10D. Complete the table below for each microwave waveguide cable to be installed or removed.

	Waveguide Description	Dimensions	Shape	Weight (lb/kft)

**11. SHARED SPACE - CAGED PHYSICAL COLLOCATION ONLY**  
 This is available via FCC 99-48 inclusive contracts only.

Provide the name and ACNA for any telecommunications provider to be sharing the enclosure.

Guest Company Name		ACNA	
Guest Company Name		ACNA	
Guest Company Name		ACNA	
Guest Company Name		ACNA	

## 12. EQUIPMENT WIRING REQUIREMENTS

**12A. Termination Type:** The point of termination of the connecting facility arrangements is governed by your Physical Collocation agreement.

**Termination Type (choose one)**

- ☒ BellSouth Provided DSX, LGX or DF  
☐ BellSouth Provided POT bay  
☐ Collocator Provided POT bay

Collocator provided POT bay equipment must facilitate access by both Bellsouth and the Collocator. Complete 4B and 5 as required for all Collocator provided POT bay equipment.

**Additions:** Enter the number of DS0 2-wire, DS1, DS3, and/or fiber lowspeed equipment ports that will be wired to a POT bay or directly to the BST DSX, LGX or frame.

**Removals:** Indicate the type and quantity of the circuits to be disconnected. For all removals, attach a cable and pair and/or T1TIE/T3TIE/fiber inventory identifying the specific connections to be disconnected.

		Quantity of:	
Type	Initial installation for Collocator. <input checked="" type="checkbox"/>	DS0 2-wire (Non-shielded)	1400
Guest ACNA	<input type="text"/>	DS0 2-wire (Contract specific cable)	
Add/Remove	Removal <input checked="" type="checkbox"/>	DS1 (Shielded cable)	32
		DS3 (Coaxial cable)	3
		Fiber-pairs (2 fibers)	

\*POT refers to the BellSouth or Collocator provided Point of Termination, which were provisioned prior to 6/1/99. Future POT bay installations by BellSouth will be governed by the Collocation Agreement. When POT bays are not provided BellSouth will allow direct cabling of collocated equipment to the BellSouth DSX, LGX and DF.

## 13. CONTACT INFORMATION

	Name	Telephone Number	Facsimile Number	Pager Number	Email Address
Equipment Wiring	Jerry Willis	864-331-811	864-331-146		jwillis@nuvox.com
Technical	same				
Local Coordinator	same				
Building Access	same				

#### 14. BILLING INFORMATION

BAN (Billing Account Number - Provided by BellSouth)	205-C01-0100-100
Billing Name	TRIVERGENT COMMUNICATIONS, INC.
Bill Department/Title	Line Cost
Bill Address	301 NORTH MAIN STREET. Room SUITE
City/State/Zip	GREENVILLE SC 29601
Billing Contact Name	Debbie Carmean
Address	Same
Telephone Number	864-331-8067
Facsimile Number	864-331-1466
Check Number	
Check Amount	
List Billing Account Number(s) for other BellSouth communication service(s)	

#### 15. TECHNICAL COMPLIANCE

Applicant certifies that equipment is in compliance with the following industry standards: - Criteria Level 1 requirements as outlined in the Bellcore (Telcordia) Special Report SR-3580 Issue 1.

- Equipment design spacial requirements per GR-63-CORE, Section 2.
- Thermal heat dissipation per GR-63-CORE, Section 4, Criteria 77-79.
- Acoustic noise per GR-63-CORE, Section 4, Criterion 128. - Applicable National Electric Code requirements.

Check for certification: ☒ I hereby certify that the equipment listed on page 5 in this document meet the industry standards for safety and compatability. For equipment which is noncompliant, attached is documentation describing the equipment, including exceptions or deviations from the above standards.

Name: Jerry Willis

Date: 5/9/01

Title: Sr. Director

Company: TRIVERGENT COMMUNICATIONS, INC

ATTACHMENTS

Filename	Description
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General Application Comments	

[Return to Worklist](#)

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Collocation Version 1.0

CSAU04

5/30/2001

## EXHIBIT 5

BellSouth.com

[Home](#) [Admin](#) [CLEC User Guide](#) [BST User Guide](#) [Log Off](#)**Collocation > WorkList > Workbook > Customer Inquiry Response****[Navigational](#)**  
**[Help](#)**

<a href="#">Worklist</a>	<a href="#">Reference</a>	<a href="#">Space</a>	<a href="#">Cust Inq Rsp</a>	<a href="#">FO True Up</a>	<a href="#">INAC</a>	<a href="#">CRE&amp;S</a>	<a href="#">CSCM</a>	<a href="#">CCM</a>	<a href="#">Pwr Plmr</a>	<a href="#">PCM</a>	<a href="#">OSPE</a>	<a href="#">CO</a>	<a href="#">SQM</a>
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Cust Name:	TRIVERGENT	Bona Fide App Date:	05/09/2001
Ref Num:	BRHMALCP-PA-SAU-100A01	Workbook Sections Complete Due Date:	06/08/2001
Contract Type:	Post FCC 99-48	Response Due To Customer:	06/12/2001
Current Status:	Response	Bona Fide FO Date:	

Response Expiration Date: 06/16/2001

**GENERAL INFORMATION**

Wire Center Name	BHAM-CENTER PT
Address	41 20TH AVE NW
City	BIRMINGHAM
State	AL
Collocation arrangement location in building	

<b>PROJECT INTERVAL - BELL SOUTH SPACE AND INFRASTRUCTURE</b>	<b>ESTIMATE</b>
Interval from Bona Fide Application to Space Ready- Business days	76

	<b>ESTIMATE</b>
<b>ORDINARY/EXTRAORDINARY CONDITIONS</b>	Ordinary

Cause of Extraordinary conditions:

NON-RECURRING CHARGES DUE AT FIRM ORDER			PAID AT FO
Space Preparation	0	50% Due at Firm Order	0
Power Construction	0	50% Due at Firm Order	0
Cable Installation	0	100% Due at Firm Order	0
Total Due At Firm Order			0

## SPACE PREPARATION FEE - SUMMARY

	ESTIMATE			PAID AT FO
Mechanical/HVAC - Tons	0	Per Ton	2400	0
Ground Bar	0	Per Connection	720	0
Project Management	0	Per Arrangement	1675	0
Infrastructure		Per Arrangement		
Extraordinary Modifications	0	Per Arrangement		0
Total Space Preparation Fee				0

DC POWER -48V	ESTIMATE
Amps for recurring -48V DC Power Billing	0
Total -48V DC Power Construction Cost	0

RECURRING FLOOR SPACE FEE		ESTIMATE
Unenclosed Floor Space, Sq. Ft.		0.0
Quantity of Racks(Unenclosed)	Per Sq. Ft. 3.85	
Enclosed Floor Space, Sq. Ft.		
Total Recurring Floor Space Fee		0

RECURRING SPACE ENCLOSURE FEE		ESTIMATE
Who will contract to have the cage constructed?		Collocator
First 100 Sq. Ft.	189.86	0

Per Additional 50 Sq. Ft.	19.29	
Total Recurring Space Enclosure Fee	0	

RECURRING FEES - OTHER			ESTIMATE
Cable Support Structure			
No. of entrance cables - Est.		Per Cable	23.23 0
Power			
Amps, -48V DC	0	Per fused amp	7.14 0
Security Access System		Per CO Premises	52 52

CO-CARRIER CROSS-CONNECT FEES		ESTIMATE
Estimated Length of fiber duct(feet)		
Estimated Length of cable rack(feet)		
Fiber Cable support Structure, ft per cable	.06	
Copper Cable support Structure, ft per cable	.03	
Total Recurring Co-Carrier Cross-Connect Fee	0	
New Cable Support Structure Construction (Co-Carrier Cross-Connect) NRC Fee		

DIRECT CONNECT CABLE(S)	ESTIMATE
Estimated Length of fiber duct(feet)	
Estimated Length of cable rack(feet)	
Total	

Brief Explanation of Space Preparation Requirements:

FLOOR SPACE (Unenclosed)	ESTIMATE
Estimated Square Feet	0.0
Quantity of Racks	
Rack numbers - cageless	

ENTRANCE/RISER CABLE INSTALLATION - Non-Recurring Rate				ESTIMATE
No. of entrance cables - Est.		Per Cable	2335	Override
				0



**MULTIPLE ENTRY POINTS**

Number Requested:	
Number Available:	

**MANHOLE DATA**

	Address	Cable - Vault Distance
Manhole #1:		
Manhole #2:		
Manhole #3:		
Manhole #4:		

ESTIMATED ADDITIONAL ENGINEERING FEE - Non-Recurring Rate						ESTIMATE
Est. Hrs:	37	1st Half hr	31	Add'l Half hr	22	1637

**TIE CABLES/CABLE PAIRS**

Determination of tie cable lengths between the collocator's equipment and BST network elements is the responsibility of the collocator's BellSouth certified vendor.

**DSX,LGX, and/or Frame Connections**

A. Additions	Collocator	Guest
	Quantity of:	Quantity of:
DS0 2-wire (Non-shielded)	0	0
DS0 2-wire (Shielded cable)	0	0
DS1 (Shielded cable)	0	0
DS3 (Coaxial cable)	0	0
Fiber	0	0
B. Removals	Collocator	Guest
	Quantity of:	Quantity of:
DS0 2-wire (Non-shielded)	1400	0

DS0-2-wire (Shielded cable)	0	0
DS1 (Shielded cable)	32	0
DS3 (Coaxial cable)	3	0
Fiber	0	0

### CONNECTING BLOCKS & DF ASSIGNMENTS

Type of DF connecting block or connector to be provided by CLEC for DSO terminations	
DF assignments(shelves, verticals, etc.) for DSO terminations	

### CONTACT INFORMATION

INAC	Charles McCormack
Telephone Number	205-972-2890
CO Supervisor Name	BEVERLY BOWLES
Telephone Number	205-794-2984
CO Rep for Space Acceptance Meeting	BEVERLY BOWLES
Telephone Number	205-856-2580
OSPE Construction Supv	
Telephone Number	
OSPE Manhole Access Contact	
Telephone Number	
Master Contractor	
Telephone Number	

### REMARKS

### 1. ACKNOWLEDGEMENT

This serves as notification for BellSouth to proceed with implementation for Physical Collocation at the BellSouth central office listed below. Applicant accepts that this firm order document is in compliance with the written response provided for the Physical Expanded Interconnection Application Document.

Reference Number: **BRHMALCP-PA-SAU-100A** Issue Number: **01** and meets the following conditions:

- Complete and accurate information was provided to BellSouth with the Application Document. This includes space requirements, drawings, cross-connect requirements, equipment and power requirements, and contact names.
- All revisions to the original application were documented and corrected pages were provided to the Collocation Center during the Application inquiry phase.
- No changes to the application are being presented at firm order.

### 2. CUSTOMER INFORMATION

Company Name	TRIVERGENT	ACNA: SAU
Company Address	301 NORTH MAIN STREET. Room SUITE 5000	
City/State/Zip	GREENVILLE SC 29601	
Check Amount		Check Number
<b>COLLOCATION PROJECT COORDINATOR</b>		
Name	Jerry Willis	
Mailing Address	301 NORTH MAIN STREET. Room SUITE 5000	
City/State/Zip	GREENVILLE SC 29601	Telephone Number
		864-331-8176
Pager Number		Fax Number
		864-331-1466
E-Mail Address	jwillis@nuvox.com	

### 3. REQUESTED INFORMATION

Wire Center Name	BHAM-CENTER PT
CLLI Code	BRHMALCP
Street Address	41 20TH AVE NW
City/State/Zip	BIRMINGHAM, AL 35215

### 4. ENGINEERING AND INSTALLATION VENDOR(S)

Equipment Type & Vendor Function	BST Certified Vendor Company Name	BST Certified Vendor Contact Name	BST Certified Vendor Phone Number
TE - Engineering			
TE - Installation			
SE - Engineering			
SE - Installation			
PE - Engineering			
PE - Installation			

TE = Transmission Equipment; SE = Switching Equipment; PE = Power Equipment

## 5. EQUIPMENT CAGE CONSTRUCTION

As per the application, the construction of a cage is to be by: **Collocator**

The choice of construction responsibility may not be changed at the time of Firm Order. The Collocator and the BellSouth Certified Vendor will appropriately notify BellSouth of the completion of the Collocator's installation and engineering. The Collocator's Certified Vendor is responsible for the engineering and installation of equipment (and associated cables) per TR 73503, which includes but is not limited to the following, filing of a method of procedure (MOP), reserving power fuse positions (when requested), cable length(s) determination. The installation must meet technical requirements and local, state and federal regulations.

### 5A. COLLOCATOR TO CONSTRUCT THE CAGE

When the Collocator is responsible for cage construction, then indicate the name, address and telephone number of the BellSouth certified contractor to construct the cage. Per your contract, this responsibility is for cage construction, securing of drawings, engineering, applicable permits and inspections for construction.

Contractor Company Name	Contractor Contact Name	Contractor Phone Number

### 5B. BELL SOUTH TO CONSTRUCT THE CAGE

When your contract permits BellSouth to construct the cage, the Collocator will be responsible for, but not limited to cable support structure, equipment, lighting, cabling, and local, state and federal regulations within the cage. BellSouth will notify the Collocator's project coordinator when the cage is ready for acceptance. The Collocator will accept the space within a reasonable time frame from the date of notification.

## 6. EQUIPMENT WIRING CONTACT INFORMATION

### 6A. Collocation Arrangement "JA" Identification Circuit Design Layout Record (DLR)

Contact Name/Title	Jerry Willis		
Mailing Address	301 NORTH MAIN STREET. Room SUITE 5000		
City/State/Zip	GREENVILLE SC 29601	Telephone Number	864-331-8176
Pager Number		Fax Number	864-331-1466
E-mail Address	jwillis@nuvox.com		

DLR distribution via a BellSouth DRC code. Enter 3 digit DRC Code

© DLR distribution via regular mail to the design contact shown above.

**6B. TIE (T1, T3, Fiber) CARRIER**

Contact Name/Title	Jerry Willis		
Mailing Address	301 NORTH MAIN STREET. Room SUITE 5000		
City/State/Zip	GREENVILLE SC 29601	Telephone Number	864-331-8176
Pager Number		Fax Number	864-331-1466
E-mail Address	jwillis@nuvox.com		

**6C: CABLE & PAIR (DS0)**

Contact Name/Title	Jerry Willis		
Mailing Address	301 NORTH MAIN STREET. Room SUITE 5000		
City/State/Zip	GREENVILLE SC 29601	Telephone Number	864-331-8176
Pager Number		Fax Number	864-331-1466
E-mail Address	jwillis@nuvox.com		

[Return to Worklist](#)

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Collocation Version 1.0

CSAU04

5/30/2001

## EXHIBIT 6

From: Allen.Gauthier1@bridge.bellsouth.com  
Sent: Friday, May 25, 2001 12:11 PM  
To: jwillis@nuvox.com  
Cc: Cis.Collo@bridge.bellsouth.com; Thomas.Macek@bridge.bellsouth.com;  
Larry.Packard@bridge.bellsouth.com;  
Stanley.L.Sailors@bridge.bellsouth.com;  
Ronald.Scarengos1@bridge.bellsouth.com;  
Steve.Schneller@bridge.bellsouth.com; Eddie.Trant@bridge.bellsouth.com  
Subject: knnrlaHN-pa-SAU-100a01 FIRM ORDERS RECEIVED

this is to acknowledge that Louisiana - Network is in receipt of your Firm Order to disconnect SAU's collocation at knnrlaHN.

The BST Space Ready date which is also the date that your BST Certified Vendor can begin the disconnection process your equipment and associated cabling is: 05/31/01.

PLEASE ENSURE THAT ALL EXISTING CIRCUITS AND PENDING CIRCUITS INTERCONNECTED TO BST AT THIS COLLOCATION IS DISCONNECTED/CANCELED PRIOR TO ANY PHYSICAL WORK TO DISCONNECT SAU's EQUIPMENT.

ALSO, NOTE THAT YOUR BST CERTIFIED VENDOR MUST PREPARE AND PRESENT A MOP TO THE CENTRAL OFFICE SUPERVISOR PRIOR TO THE START OF ANY WORK.

If you wish to discuss this further, please contact me at (504) 240-8559.

## EXHIBIT 7





1901 Montreal Road, Suite 122  
Tucker, Georgia 30084  
Tel (770) 491-3101 • Fax (770) 491-7445

Specializing in Mechanical & Electronic Access Control Systems

Alabama State Lic # 416  
Birmingham Office Tel (205) 663-1950 • Fax (205) 663-1986

REMIT TO

Best Access Systems  
22078 Network Place  
Chicago, IL 60673-1220

OUR ORDER NO. 478209	PAGE NO. 1	ACCT NO. TRI016	TAKEN BY SH /	DATE ENTERED 05/18/01	INVOICE NO. GA-147631	INVOICE DATE 05/22/01
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SOLD TO	TRIVERGENT SUITE 5000 301 NORTH MAIN ST GREENVILLE, SC 29601 ATTN: JERRY WILLIS		SHIP TO	TRIVERGENT SUITE 500 301 NORTH MAIN ST GREENVILLE, SC 29601 ATTN: JERRY WILLIS	
	ULTIMATE USER			P.O.# JERRY WILLIS	
ORDERED BY JERRY WILLIS		SALESMAN H		REQ.# MK FOR	
		PHONE 864/271-6335			

SING - 2019 November

HOW TO SHIP		SHIP DATE		TIME	TERMS: NET 30 1 1/4% PER MONTH CHARGED ON PAST DUE ACCOUNTS. PLEASE PAY ON THIS INVOICE. NO OTHER STATEMENT WILL BE SENT.
UPS		/ /		:	
MISC.	WAIB	PIN SIZE	FEDERAL ID NUMBER 35 - 1842918		THIS ORDER HAS BEEN ENTERED ACCORDING TO BEST ACCESS SYSTEMS TERMS

IT#	SOURCE	B.O.	SHIP	QTY.ORD	UNIT	CATALOG #	FINISH	DESCRIPTION	KEYING	PRICE	AMOUNT
1	STK	0	6	6	EA	1A1G1-KS473-KS292	BEST KEY	KEYED		1.98	11.88
(6) E43 KEYS											

RECEIVED BY:	DATE	SUB TOTAL %TAX HANDLING CHARGES SHIPPING CHARGES	11.88 .00 .00 4.11
CLAIMS FOR SHORTAGE MUST BE MADE WITHIN 10 DAYS AFTER RECEIPT OF GOODS. MERCHANDISE MUST NOT BE RETURNED WITHOUT A RETURN GOODS AUTHORIZATION (RGA) NUMBER.		TOTAL \$	15.99
IMPORTANT: In certain instances, your facility hardware and its application must comply with Life Safety Building Codes and Disability Access laws. It is the purchasers responsibility to verify compliance with the appropriate authorities. If we receive an order, we will assume this has been done.		ITEMS MARKED WITH AN ASTERISK ARE SHIPPED FROM THE NATIONAL OPERATIONS CENTER ORIGINAL INVOICE	

ACCEPTED FOR PROCESSING - 2019 November 14 2:14 PM - SCPS - 2001-65-C - Page 73 of 73